THE GUILFORD 99'ER NEWSLETTER

VOL.3 NO.5 MAY 1986

The Guilford 99'er Users' Group Newsletter is free to dues paying members (One copy per family, please). Dues are $12.00 per family, per year. Send check to P.O. Box 21691, Greensboro, NC 27420. The Software Library is for dues paying members only. (Herman Geschwind, Editor)

OUR NEXT MEETING

DATE: May 6, 1986. TIME: 7:00 PM PLACE: Glenwood Recreation Center, 2010 S. Chapman Street.

The program for May will deal with "Graphic Tricks". There will be a demonstration of short programs that produce graphics and a discussion of how they can be used as subroutines or incorporated into longer programs. The subject of the TI Writer workshop will be a demonstration and review of Auto Spell Check, the spelling checker for the TI99/4A.

TI SHOPPER

by Bob Carmany

Before we start to talk about some of the commercial products available, I have a bulletin for those of you who have FUNLWRITER. I got another "care package" from Larry Reid in South Australia and among the programs was the latest version of FUNLWRITER (Version 3.2). It makes TI-Writer, BA-Writer, and TK-Writer completely complete. It also comes with some documentation and will accept input files from cassette. And, also adds E/A to the list of cartridges that you can do without. Those of you who missed the short demo at our March meeting certainly missed a lot! That was a demo of Version 3.0 and this newest version is much better. We all owe Larry Reid a vote of thanks for sending this magnificent "freeware" program to us. The authors of the program belong to the Hunter Valley 99er UG in New South Wales, Australia. Koalas and Qantas airlines commercials aren't the only outstanding Aussie exports!!! Thanks, Larry, from all of us!!

I talked to Hans Wagenbach of T. A. P. E. the other day in reference to several of the products that they produce. He informs me that, when used with the Navarone "Cartridge Expander", XBII+ will not allow the access of any other cartridges that are plugged into the device. He says that is to "protect the graphics integrity" of the cartridge. He further stated that the graphic functions are not moved into low 8K as the MILERUpendium stated but remain resident in the cartridge.

On another related product. The 128K standalone that they have does not have a print spooler facility built in. It does, however , expand your system to 144K. It "bank switches" 32K blocks of memory in and out as they are needed. He did say that they are planning a card for the PEB with a print spool facility built in!

In addition, he promised to send some order forms with the necessary ordering information and they will be available at this meeting.

On the distant horizon is another revision of Wycove Forth. Version 3.0 will be produced at some time in the future with some major internal changes. Tim MacEachern informs me that he is going to remove the cassette access from the system and move the Forth "kernal" to low memory which will free more programming space. The marketing details are not yet available, but we will let you know as soon as details are available.

On the more immediate horizon, TRITON has come out with its latest catalog and there is another 96K catalog out. TRITON,

of course has a full range of TI products available. There are some bargains scattered throughout the pages but you have to look for them! The prices on some items seem to be a little high but, overall, they are close to the other mailorder houses in pricing.

The DAK catalog is mainly devoted to stereo and other gear but they have some good prices on printers scattered throughout the catalog. If you are interested in buying a printer, you might want to browse through the catalog. Check back issues of our newsletter for the address.

HAMFESTS are another good source of TI accessories! Although the TI stuff is a little scarce and generally high priced, there are some real bargains! Just ask Buddy Cato about the Shugart drive that he bought for $15. There were some single-sided TANDON drives there for $20. Although I wasn't in the market for a disk drive, it was difficult to leave the Charlotte HAMFEST without one. Several members of our club are HAM radio buffs and you can check with them for the location and date of the next HAMFEST (there is one in Greensboro Thanksgiving weekend).

BASIC/XB CONVERTER

by Bob Carmany

Every once and a while, a program comes along that is "worth its weight in gold" so to speak. This program, created by John Behnke, is one such program. It is based on a POKEV-PEEKV program from MILLER'S GRAPHICS that appeared in THE SMART PROGRAMMER. This version was published in MICROpendium from the Chicago TImes. The program requires XB, 32K, and a disk system. The program should be saved in MERGE format. All the documentation is internal in the REM statements.

```
32700 !"VDP UTILITY II"
32701 !BY JOHN BEHNKE
32702 !CHICAGO, ILL
32703 !WILL CONVERT ANY BASIC
32704 !PROGRAM TO X-BASIC
32705 !DIRECTIONS: LOAD BASIC
32706 !PROGRAM INTO X-BASIC.
32707 !INSERT 'CALL VDPUTIL2' AS THE FIRST PROGRAM STATEMENT
32708 !THE INPUT:
32709 !"MERGE DSK1.VDPUTIL2"
32710 !WHEN FINISHED, RESAVE
32711 !BASIC PROGRAM.  THE RESULTING
32712 !PROGRAM WILL RUN IN
32713 !X-BASIC
32714 SUB VDPUTIL2
32715 CALL CLEAR :: CALL INIT :: CALL LOAD(8196,63,232)
32716 CALL LOAD(16360,80,79,75,69,82,32,38,12,80,79,75,69,86,32,37,164,80,69,
75,86,32,37,36)
32717 CALL LOAD(9491,100)
32718 CALL LOAD(9500,2,224,37,20,3,0,0,0,2,0,0,100,200,0,37,18,4,192,2,1,0,1,
4,3,2,32,12,4,32)
32719 CALL LOAD(9536,32,24,18,184,192,32,131,74,2,1,37,0,208,160,131,18,9,130,
2,34,255,4,32,32,44)
32720 CALL LOAD(9568,4,197,209,34,36,255,9,132,18,21,4,195,60,224,37,18,206,5,
131,76,200,5,131,76,200,3)
32721 CALL LOAD(9600,131,80,2,5,64,0,164,48,2,134,0,4,17,6,2,5,65,0,164,47,4,
196,200,4,131,76)
32722 CALL LOAD(9632,200,3,131,76,4,192,200,64,5,129,0,37,255)
32723 CALL LOAD(9636,2,224,37,20,3,0,0,0,4,192,2,1,0,1,200,1,37,18,4,32,32,12,
4,32,32,24,18,184)
32724 CALL LOAD(9664,200,32,131,74,37,0,184,32,134,18,37,17,2,3,0,2)
32725 CALL LOAD(9680,4,192,192,67,4,32,32,12,4,32,32,24,18,184,216,224,134,75,
37,0,5,131,135,3)
32726 CALL LOAD(9704,37,18,22,242,192,32,37,0,2,1,37,3,192,131,2,34,255,254,4,
32,32,36)
32727 CALL LOAD(9724,4,192,216,0,131,124,2,224,131,224,4,96,0,112)
32728 CALL LOAD(9740,3,0,0,0,4,192,2,1,0,1,4,32,32,12,200,32,131,74,37,18,2,1,
```

```
0,2,4,32,32,12,4,32)
32729 CALL LOAD(9770,32,24,18,184,192,32,131,74,208,32,37,19,4,32,32,48,4,91)
32730 CALL LOAD(8194,39,04)
32731 SUBEND
32732 SUB CHAR(A,A$) :: L=LEN(A$)
32733 A$=A$&RPT$("0",16-L)
32734 FOR I=1 TO 16 STEP 2
32735 A1$=SEG$(A$,I,1)
32736 A2$=SEG$(A$,I+1,1)
32737 IF A1$<":" THEN A1=VAL(A1$) ELSE A1=(ASC(A1$)-55)
32738 IF A2$<":" THEN A1=A1+VAL(A2$) ELSE A1=A1+ASC(A2$)-55
32740 CALL LINK("POKEV",767+8*A+(I+1)/2,A1)
32741 NEXT I
32742 SUBEND
32743 SUB COLOR(A,B,C)
32744 CALL LINK("POKEV",2063+A,(B-1)*C-1)
32745 SUBEND
```

SPEAKING ABOUT SPEECH

by Dr. Ron Albright

(Continued from last Month)

So, in all a very complex system that the TI engineers gave us. We have sparse but utilitarian documentation in the TE II manual. It discusses, ever so briefly, how to access both "OPEN #1:"SPEECH", OUTPUT" and the allophone library directly through "OPEN #1:"ALPHON",INTERNAL". It briefly defines the manual override feature to vary pitch and slope through the "//XX YY". Perhaps this feature deserves more comment.

You can vary greatly the pitch and slope of speech through the use of the //XX YY command. I have hears a sparse few programs where the computer actually sings. The most recently published was the "ABC Song" seen in the Tigercub Tips (Jim Peterson, Tigercub Software, 156 Collingwood Ave., Columbus, Ohio 43213). Look at the program and see how Jim changes the pitch and slope to produce synthetic singing! The key foraula is one where the slope is calculated from the set pitch -through y(slope)=(x(pitch)/10). We are told in the manual (p.34), that this gives the best results. So, by changing the pitch to simulate singing of notes and adjusting the slope by this foraula, we can aparoach singing. Further, we can set stress points in our own tex by use of " "(sets primary stress point in a sentence),"_"(sets secondary stress points within a sentence, and ")" (shifts stress points within a word). So, we need not rely on the 92% accuracy TI accomplishes with the rule set...we can achieve realism approaching 100% with manual symbols placed within our text!

Through "OPEN #1,"ALPHON",INTERNAL" we can access the 125 allophones (but we said 128: 126 and 127 are pauses) in the TE II GROM library. They are listed in the manual with a rather spartan description of their use. They are strung together as CHR$ statements: CHR$(10)&CHR$(22)&CHR$(X)...etc. Again, we are allowed to change pitch and slope through manual input by sending a CHR$(252)&CHR$(XX), where the variable "XX" following the CHR$(252) sets a new pitch and CHR$(251)&CHR$(YY) where CHR$(251) changes slope to the following CHR$(YY) value. Stress points can be set with CHR$(253)(Primary stress with rising contour, CHR$(254)(Primary stress with falling contour) and CHR$(249)(Secondary stress point). While you can change pitch and slope of allophones, the only way I know of to increase the duration of the sound is to string allophones, i.e. CHR$(N)&CHR$(N)&CHR$(N) to increase the duration of allophone "N" three fold. A way to implement the RPT$ function in Basic would do the trick. (THE FOLLOWING TWO PROGRAMS BY HOWIE ROSENBERG ILLUSTRATE THE POINTS MADE BY DR. ALBRIGHT)

```
100 CALL CLEAR
110 DIM X(25)
220 DATA 1,3,4,5,7,13,14,15,32,37,39,64,69,75,76,77,79,81,83,85,93
230 OPEN #1:"ALPHON",INTERNAL
240 RESTORE
250 FOR M=1 TO 21
260 READ X(M)
270 NEXT M
280 FOR M=1 TO 21
290 N=X(M)
300 PRINT N
```

```
310 A$=CHR$(252)&CHR$(21)&CHR$(N)&CHR$(N)&CHR$(N)&CHR$(N)&CHR$(N)&CHR$(N 26)
320 B$=CHR$(252)&CHR$(16)&CHR$(N)&CHR$(126)
330 C$=CHR$(252)&CHR$(11)&CHR$(N)&CHR$(126)
340 D$=CHR$(252)&CHR$(5)&CHR$(N)&CHR$(126)
350 E$=CHR$(252)&CHR$(54)&CHR$(N)&CHR$(N)&CHR$(N)&CHR$(N)&CHR$(N)&CHR$(N 26)
360 F$=CHR$(252)&CHR$(50)&CHR$(N)&CHR$(252)&CHR$(48)&CHR$(N)&CHR$(252)&C CHR$(N)&CHR$(252)&CHR$(338)
370 ARP$=A$&B$&C$&D$&E$&F$&CHR$(N)&CHR$(126)
380 PRINT #1:ARP$
385 PRINT X(N)
390 NEXT N
400 CLOSE #1

100 OPEN #1:"ALPHON",INTERNAL
110 DATA 54,53,52,51,50,48,47,45,44,43,41,39,38,37,34,32,30,29,28,26,25,24,22,21 ,20
120 DATA 19,18,16,14,12,11,10,8,7,6,5
130 DATA 1,3,4,5,7,13,14,15,32,37,59,64,69,75,76,77,79,81,83,85,93
140 DIM X(36)
150 DIM A(12)
160 FOR Y=1 TO 36
170 READ X(Y)
180 NEXT Y
190 FOR Z=1 TO 12
200 READ A(Z)
210 NEXT Z
220 FOR AA=1 TO 12
230 S=A(AA)
240 FOR Y=1 TO 36
250 N=X(Y)
260 PRINT #1:CHR$(252)&CHR$(N)&CHR$(S)
270 NEXT Y
280 NEXT AA
```

SYMMETRICAL REDEFINED CHARACTERS

by Jim Peterson

(Continued from last Month)

You would prefer something a bit more useful? OK, let's try a different variation of the same principle.

```
100 CALL CLEAR
110 RANDOMIZE
120 DATA TIGERCUB PRESENTS,THE ,CHAMELEON,SCREEN BORDER,AND,WIPE ,by Jim Peterson," "," TOUCH ANY KEY"
130 M$="1800663AC342DB667E1881009 95AC3A5E78142DB24BD66008142992400 7E5AC3A5C3241800FFDB5AFF7EFF00991 88100660018"
140 RESTORE 120
150 FOR P=1 TO 9
160 READ A$
170 PRINT TAB(15-LEN(A$)/2);A$;" "
180 NEXT P
185 PRINT :::::
190 RANDOMIZE 240
200 CALL KEY(0,K,ST)
210 IF ST=0 THEN 200
220 GOSUB 320
230 GOTO 140
240 CALL CHAR(128,SEG$(M$,INT(43* RND+1)*2-1,16))
250 X=INT(15*RND+2)
260 Y=INT(15*RND+2)
270 IF Y=X THEN 260
280 CALL COLOR(13,X,Y)
290 CALL HCHAR(24,1,128,64)
```

```
300 CALL VCHAR(1,31,128,96)
310 RETURN
320 T=T+1-ABS(T=2)*2
330 ON T GOTO 340,360
340 CALL VCHAR(1,3,128,768)
350 GOTO 370
360 CALL HCHAR(1,1,128,768)
370 CALL CLEAR
380 RETURN
```

In this one, M$ consists of any of those symmetrical pairs typed in at random, and we define a character which has only left/right symmetry by randomly pulling out any sequence of 16 of these.

Now start tapping any key until you find an appropriately evil-looking alien space ship or man-eating bug for your game program.

If you consult that chart in "BEGINNER'S BASIC" again, you will find that the first eight (8) of those pairs do not turn on the first or last bit, therefore do not fill a print space. So, let's enter another program:

```
100 CALL CLEAR
110 FOR CH=129 TO 154
120 RANDOMIZE
130 FOR L=1 TO 3
140 X$=SEG$("0018243C425A667E",INT(8*RND+1)*2-1,2)
150 B$=B$&X$
160 C$=X$&C$
170 NEXT L
180 CALL CHAR(CH,"00"&B$&C$)
190 B$=""
200 C$=""
210 NEXT CH
220 INPUT M$
230 GOTO 220
```

Now type any of the letters with the CTRL key held down - your computer has a built-in Venusian alphabet!

Many other effects and variations are possible. I use this routine frequently in my Tigercub programs. It provides the infinite variety of kaleidoscopic displays in Kaleidovision, Multivision and Ten Thousand Sights. It enables me to provide a completely different assortment of colorful cards to turn over in each new game of Match a Patch, and a new screenfull of walls in each game of Getaway. It provides the colorful characters of the Mongolian Typewriter for the little tots, and the rainbow displays that reward correct answers in Kinderminus, and many more. My Color Programming Tutor will show you ways to make the displays even more colorful, and my Random Character Generator will give you your choice of 8 different types of these characters, print out an assortment of 40 of them, display them singly and in strips and blocks and as a sprite, allow you to change their foreground and background colors, print out their hex code, and enlarge them to your choice of 3 sizes, even filling the screen.

FORTH FORUM

by Bob Carmany

The screens for this month can be used to change a text file created with TI-WRITER (or its clones) directly to a Wycove Forth screen and to read a text file as if it were a Wycove Forth screen. They are similar in function to the FORTHSWAP programs written for TI-Forth but, being written in Forth, are much faster!

This is just a short introduction to the two Wycove Forth screens for this month. The documentation for each screen is mostly internal but here are some pointers to make it easier to use them.

The first screen is used in the form: 40 FILE)SCREEN9 DSKx.filename

In this form it will copy text file (TI-WRITER) from disk "x", "filename" one line at a time to starting at screen 40. Any lines longer than 40 characters will be broken and split into two lines. If you use TI-WRITER, use the "C" option when you save the text file to strip out the control characters (ie "CR").

The second screen will load directly from a text file and uses the form: FLOAD DSKx.filename. The only caution when using these screens is to make sure that you execute a "LDPAB CLOSE" or "DISK CLOSE" whenever you get an error.

```
SCREEN #67
 0 ( FILE>SCREENS : convert file to scr)
 1   11 -LOAD PAB:
 2   80 20 PAB: DISK DSKn.xfilenamex
 3 : FIX-FN ( pabadr NAME -- )
 4   BL WORD HERE SWAP 11 + 16 MOVE ;
 5 : FILE>SCREENS ( scr# NAME -- )
 6   DISK FIX-FN   DISK OPEN
 7 0 BEGIN ( stack is scr# line# )
 8 DISK ?EOF 0= WHILE 8 TIB @ LDTIB TIB !
 9 DISK READ DISK RITEM ( s# 1# len)
10     DUP 0 DO
11       >R >R                ( s# 1# )
12       DUP 24 = IF DROP 1+ 0 ENDIF
13       DUP 0= IF OVER BLOCK B/BUF
14         BLANKS UPDATE ENDIF
15 OVER BLOCK OVER 40 * + 15 SWAP OVER TIB @ SWAP MOVE
16 R> R> ROT >R OVER OVER 16 TIB @ +
17       R> I I ROT >R ROT ROT
18       - 40 MIN >R + R> R> SWAP MOVE
19       ROT 1+ ROT ROT
20     40 +LOOP  (may do 2nd half/line)
21     DROP DROP
22   REPEAT DROP DROP
23   DISK CLOSE ;
24
25
```

```
SCREEN #68
 0 ( Load from D-V 80 file )
 1   80 20 PAB: LDPAB
 2       DSK.disknamexx.filenamexx
 3   0 VARIABLE LDTIB 80 ALLOT
 4
 5 : FLOAD ( NAME -- : load from file)
 6   BL WORD
 7 HERE LDPAB 11 + HERE C@ 1+ MOVE
 8 DISK ?EOF 0= WHILE 8 TIB @ LDTIB TIB !
 9 IN @ BLK @ 0 BLK !
10   LDPAB OPEN
11   BEGIN
12     LDPAB ?EOF 0= WHILE
13     LDPAB READ
14  LDPAB RITEM OVER OVER CR TYPE SPACE
15 OVER BLOCK OVER 40 * + 15 SWAP OVER TIB @ SWAP MOVE
16 R> R> ROT >R OVER OVER 16 TIB @ + 0 OVER C! 0 SWAP 1+ C!
17     0 IN ! INTERPRET
18   REPEAT
19   LDPAB CLOSE
20   BLK ! IN ! TIB ! ;
21
22
23
24
25
```

If you run into problems with an error in the second screen, execute 80 TIB ! to reset the system. It works well with files that have no errors in them.

If anyone has any specific requests for a particular Forth application, either in Wycove or TI-Forth, send your request in to our newsletter via the U6 P.O. Box or see me at the meeting. We will try to print any requested application that you want.

MULTIPLAN TIPS

by Herman Geschwind

The following article by Steve Zimmerman appeared in the January issue of K-Town 99'er (Newsletter of Knoxville, TN U6):

This month's column will cover some of the problems you can get yourself into in MultiPlan by using the FORmat commands. These can be an aid to help you display what you need to show, but can also have some pitfalls for the unwary. Let's take a hypothetical spreadsheet (I just made it up!). This sheet will project figures into future years, using percentage increases. We will display figures as integers, using the FORmat command.

This is where the pitfall comes in. By using the FORmat command to "simplify" the display into whole numbers, a discrepancy (or series of discrepancies) is introduced into the worksheet. When a number is displayed as an integer using the FORmat command, x.00000...1 to x.49999... round down to x, and x.50000...0 to x.99999.. round up to x+1 --BUT ONLY ON THE DISPLAY! The ACTUAL number is still stored in that cell, and will be used when that cell is referenced in calculations! The

same type of error can happen when numbers are assigned a fixed number of decimals.

MultiPlan will round the number of decimals displayed according to the same principle. Thus, if your display is rounded off, but the actual values are not, and the rounded values are then processed in formulas, you may see results which clearly "don't add up"! Still, the computer is "right" - the problem is operator error.

To see this in action, we'll now set up a spreadsheet. Begin in R2C1 with the number 10. Set the formula in R2C2 to RC[-1]*1.039. Copy this Right 12 cells. Now, move down to R4C1. Enter the formula =R[-2]C. Copy this Right 13 cells. Now, FORmat R4 to display Integer values(key F,C,R4,tab,tab, <enter>). We know that these cells contain the same values as those two cells above them, but display as integers rather than decimals.

Now, the fun begins, Move down to R6C1, enter the value 2, and Copy Right 13 cells. Next, move to R8C1, and enter the formula =RC[-4]C*R[-2]C. Copy this Right 13 cells. Now, FORmat R8 just like R4, above. Now, you can see some anomalies. In R8C5, 10*2 = 23! In R8C7 13*2 = 25! And so on.....

For more fun, move down to R10C1, and enter the formula =R[-2]C. (You can do this by keying =, moving the cursor up two cells, and hitting <enter>). Copy this Right 13 cells also. Since R10 values are equal to R8 values, you can now see what is actually in R8!

MultiPlan also has an integer function like that of Basic. We'll look at that now. Move down to R12C1, and enter this formula: =INT(R[-2]C) - by keying =, INT, (up arrow, up arrow),<enter>. Copy this Right 13 cells (yes, AGAIN!). Now observe the differences between R8 and R12! R12 (using the INT function) has values just like those you would get in BASIC -- everything to the right of the decimal point has been dropped, not rounded up or down! This is quite a significant difference when doing calculations.

Of course, the same errors can appear any time you use FORmat to display numbers in a specific format and then use arithethical operators on them. Always use caution in setting up a worksheet to make sure of the types of numbers you will be working with and be discrete in your formatting you avoid this type of problem. Remember, a spreadsheet is just a tool - it's up to the user to make sure that the tool is used properly and that the implication of operator decisions are fully understood!

So much for Steve Zimmerman's article. Quite a scary story, but take heart: MultiPlan can do things right. Steve is right that the indiscriminate use of the FORmat options CAN MAKE THINGS LOOK RIGHT WITHOUT BEING RIGHT.

The secret to not only have things look right but also to be right is a MultiPlan function called ROUND. ROUND puts you in complete control of numeric values, not only as to the number of decimals to display (or none if you key in "0" for number of decimals) but unlike the FORmat option, ROUND actually adjusts values in memory to your exact specifications!

Once you have keyed in Steve's example as shown above with all its peculiar results, go back to R4C1 and key in the new formula ROUND(R[-2]C,0) and then press <enter>. Again, copy this Right 13 cells. After the recalculation finished, your revised sheet should look like the one below.

The moral of the story, MultiPlan has more power and more user control than is evident on first sight. For more information look up the ROUND function on page 100 of the MultiPlan manual.

Yes, ROUND is a very useful function and whenever your results don't seem to "add up", go back and examine your formulas to see whether ROUND would not be appropriate in the right places.

SOFTWARE NEWS

by Herman Geschwind

PROBASE: This is a fast access disk-base data base system. With it, you may design your own data input screens, build up to five customized Tabular Report formats, and customized mailing labels. You may quickly add, edit, or delete data. Data may be retrieved with three search methods: Global disk search, field disk search, and the super fast Memory Index search. Data found with these search methods may be output to a printer or disk files as screen dumps, tabular reports, or one-across mailing labels, or may be incorporated into other documents with the use of any DVBO editor such as FUNLWRITER. Data may be sorted in seconds with the S(ort) command. You may use any of the single step commands to examine data, either in sorted

order, or in the order that the information appears on the diskette. A single sided, single density diskette noreally contains 360 sectors. With PRBASE, the first 10 sectors are dedicated to storing information on data screen design, tabular report formats and information needed to print mailing labels. The remaining 350 sectors are used for storing data. You may have up to 32 fields totalling no more than 255 characters per record or screen, a database may contain up to 350 records or screen. The programs are written in Assembly and the author claims an index sort of 350 records in 30 seconds. The program is available as shareware for a $10 contribution. The author is William M. Warren, 2373 Ironton St., Aurora, CO 80010. Documentation 21 pages on disk (DVBO).

DM1000: This popular Canadian disk manager is now available in Version 3.2. Aside from "bug fixes" it is now possible to run E/A "Program" files within DM1000.

THE BEGINNING OF QUIET

by Mack Jones

Having read an article in the December issue of MICROpendium on replacing the fan in the PE Box, I thought that would be wonderful for my PEB. The reason being, other than the noise while using the computer, that my easy chair is right alongside of my computer stand and my Daughter always seems to know when I need some quiet for reading because that is when she decides to use the computer.

I had forgotten about the article until today. While going through some odds and ends that I stored away in a shed, I ran across a muffin fan that someone somewhere had given me. I examined it and saw that other than a little dust on the fan blades, it looked almost new. I hooked it to a length of zip cord and plugged it in. You could not tell it was running a foot away! Then the thought came...DO IT!!

Now came the biggest chore, in my opinion, of the whole operation. I had forgotten just how "built-in" I had made my Box and the cables hooked to it. In fact, it took just about as long to remove all the cables and the PEB as it did to install the fan!

After removing the PEB from the computer, I removed the cards, and disk drives. (Be sure and wait for a few minutes if you have just used the computer). Now is a good time to look over your disk drives and see if any dust needs wiping and clean the head if it needs it. I took the Box out to the shop and looked it over. I remembered that the article spoke of quite a few screws to be removed and that is correct. There are no less than 15 screws that you will need to remove. There are 6 on the back(do not remove the latch screws), 6 around the border, 1 in each corner, and 1 in the lower right of the bottom that must be removed. I would recommend a number 2 Phillips screwdriver to remove the screws as they are rather small. Then the front shell slides right off.

The fan has 4 mounting nuts that must be removed and one of them is a "Dilly" to get to. I found that by removing the power card and sliding it over out of the way, this nut could be removed. The nuts holding the fan are small and I found that a 7/32" nutdriver would fit them close enough to work. On the power board screws, only loosen them enough to slide the board to the right and it will come free.

The connections to the fan are the type that push together in a type of insulation jacket. I wished to use these same connectors so after disconnecting the fan wires, I cut the wires leaving enough wire in case I had to re-solder them. I inserted a section of heat shrink tubing over the wires and soldered them to the muffin fan wires. Be sure when mounting the new fan, that it is facing so that the air flow is towards the rear of the Box. My fan had an arrow pointing the air flow direction. After re-connecting the plugs, I re-assembled the Box and hooked it up. What a difference!!

After bringing it back into the house and installing the cards and drives I tried it out. If I move a few feet away and sit in my easy chair, there is no sound other than a quiet hum.

Anyone who is tired of the whirl-wind whine of their Box, I would strongly recommend the change to a quiet fan. There are quite a few ads offering these muffin fans for sale at a very cheap price. In fact my March issue of MICROpendium came today and there is an ad in the Classified section for Quiet Fans from STATCO, Inc., P.O. Box 145, Townsend, MA. 01469-0145. However there was no price listed or phone number. The fan I used is a SPRITE, MODEL SU2A1 and was made by ROTRON Inc. of Woodstock, N.Y. If any member would like to have help in installing one of these fans in their PEB, I will be happy to help in any way I can. I have had the computer open and cleaned several times and have learned most of the schemes to getting it back together again. I also have all of the tools needed. Try it, You'll like it!!

FIXING BLOWN DISKS

by Howard Massey

NOTE: This is an adaptation of a file that originally appeared on the TI-Source BBS (author unknown). While the original was informative and useful, I found, while actually using the Navarone Disk Fixer cartridge, a few additional shortcuts to repairing disks with blown sectors 0 and/or 1, and I thought I would present this updated version in order to include these new tips.

Did you ever try to catalog a disk and find out the Disk Controller thinks the disk is NOT initialized? But you know better! What do you usually do with the problem disk? Most people just delete the file giving them the problem, and that will work, but it also gets rid of that file forever! A better solution is to use DISK FIXER by Navarone Industries. The DISK FIXER enables one to examine and change the contents of any disk on a sector- by- sector basis. I think it is worth its forty-dollar list price. It is available from some TI retailers or directly from Navarone Industries.

Here is the process to fix a blown disk...

First acquire a DISKFIXER from a friend or buy one, it's worth it. Before you start, have a blank, initialized disk handy as you will certainly be needing it during the course of the "surgery". Now we have to determine if the problem with your bad disk lies with either Sector 0 or Sector 1, or both. If it's a "blown" sector - which means the sector is physically OK, but the information contained in it has somehow been partially or totally erased, no problem - DISK FIXER can fix it!

Sector 0 contains the information concerning the disk name and number of sectors used/free on the disk. If this sector is completely blown, attempting to catalog your disk will always result in a "DISK NOT INITIALIZED" error message, EVEN THOUGH YOUR DATA IS ACTUALLY PRESENT ON THE DISK. If it's partially blown, attempting to catalog the disk may show you used/free sector information that is obviously in error (as when more or less than 358 sectors are used + available for a SS/SD disk). The DISK FIXER can easily confirm for you if the problem is in your Sector 0.

Put the DISK FIXER cartridge in the slot, turn on your computer and select 2 from the master menu screen. Put your bad disk in drive 1, and then type in the following:

R 0,1 [ENTER]. This command means Read Sector 0 from drive 1. If you get an error message, you know that Sector 0 is blown. The easiest way to fix this is to copy a good Sector 0 from another disk to the blown disk. Here is how to do that:

1) Insert a good disk in drive 1.
2) Read Sector 0 of that disk: R 0,1 [ENTER]
3) Put the blown disk in drive 1.
4) Write good Sector 0 to disk: W 0,1 [ENTER]

If you now leave the DISK FIXER, and use a program to catalog the bad disk, you will see that the diskname and the used/free information is the same as the good disk, but don't let that alarm you - we did that to fool the Disk Controller into letting us at least catalog the bad disk - even inaccurately!

The next step is to find out if Sector 1 has been damaged also. The easiest way is to simply look at your catalog and see if all the files you believed were on the disk are still there - if you are surethat they are and that none are missing, then you've - almost - fixed your disk. If this is the case, then all you now need to do is to MAKE A COPY of your bad disk - FILE BY FILE - to a blank, initialized disk. The reason you MUST do this is that since the Sector 0 information on the "fixed" disk is inaccurate, the first time you try to add or delete a file to or from this bad disk, you will run into serious trouble! So put a write-protect tab on it, and back it up onto a fresh initialized disk, one file at a time. DO NOT USE a bulk copying program, either bit map or sector by sector, as the object disk will then end up with the same inaccurate Sector 0 data. By copying a file at a time (using, for example the "C" command in the DM1000 File Copy/Rename/Delete/Change option), your controller will create a new, completely accurate Sector 0 on your back-up disk.